

CLAIMS

1. A dielectric resonator comprising:
a dielectric resonance element; and
a protrusion portion disposed in a direction
perpendicular to the bottom surface of the dielectric
resonance element, the protrusion portion integrally
molded together with the dielectric resonance element,
wherein the side face at the outer periphery
of the protrusion portion is tilted such that the area
on the bottom-surface side of the dielectric resonance
element of the protrusion portion is larger than the
area of the lower surface of the protrusion portion,
and
wherein the electromagnetic field used in the
dielectric resonance element is in the TE01 δ mode.
2. A dielectric resonator as claimed in claim 1,
wherein the whole side face at the outer periphery of
the protrusion portion is tilted.
3. A dielectric resonator as claimed in claim 1
or 2, wherein the bottom area of the dielectric
resonance element is larger than the area on the
bottom-surface side of the dielectric resonance
element of the protrusion portion.

4. A filter comprising a plurality of dielectric resonators as claimed in any one of claims 1 to 3.

5. A duplexer comprising two filters as claimed in claim 4.

6. An oscillator comprising a dielectric resonator as claimed in any one of claims 1 to 3.

7. A communication device comprising at least one of a dielectric resonator as claimed in any one of claims 1 to 3, a filter as claimed in claim 4, a duplexer as claimed in claim 5, and an oscillator as 5 claimed in claim 6.